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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/549,459	09/16/2005	Frank Michel	05-573	8340
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EXAMINER				
DAVIS, OCTAVIA L				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/549,459

Applicant(s)

MICHEL, FRANK

Examiner

OCTAVIA DAVIS

Art Unit

2855

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 50-68 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 50-68 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/16/05 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

Receipt is acknowledged of applicant's supplemental response filed 6/25/08.

Claim Objections

1. Claim 54 and 56 are objected to because of the following informalities: In each claim, lines 2 respectively, "the plurality of strain sensor" is unclear. Appropriate corrections are required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 50, 51, 53 – 55 and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Casler (5,015,926) in view of Elias (4,188,821).

Regarding claims 50, 51 and 53 - 55, Casler discloses an electronically controlled force application mechanism for exercise machines that creates, controls and transmits a precise and adjustably applied resistive force comprising an input drive shaft 38, 52, an output drive shaft 40, and a housing 30, 32, 34, 36 on which a centering flange(s) 20b, 52a and flange 54a are provided, wherein the housing is provided with at least one associated strain sensor 60 and an electronics device 70 including a display 90 (See Col. 4, lines 62 – 68 and Col. 6, lines 5 – 12, 34 – 45 and 55 – 65) and the strain sensor 60 is arranged close to attachment screw holes 40d in the attachment flange

52a (See Col. 5, lines 44 – 48, See Fig. 1), the strain sensor 60 in the form of a strain gage and connected to an evaluation unit 70, 80 and in indicating device 90 from which data is transmitted and read (See Col. 6, lines 39 – 54) but does not disclose that the strain sensor is provided on the housing, the centering flange has at least one radially circumferential groove, the plurality of sensors arranged near the flange, the plurality of strain sensors are connected to an electronic display system and are radially distributed around a housing and a flange, wherein the values in the electronic display system are transmitted wirelessly to an external evaluation device and the sensors are provided near cylindrical housing parts near the flange. However, Elias discloses a load measurement device comprising a plurality of strain gauges 90, 92, 94, 96 that are arranged near a flange 56 that includes a groove 78 (See Fig. 5), the gauges being connected to an electronic display (not shown) and radially distributed around a housing 16 and the flange 56 (See Figs. 6 and 7) and located near cylindrical housing parts 12, 24, 36, wherein the values from the display are wirelessly transmitted to an external evaluation device (electrical circuit means - not shown) (See Col. 3, lines 27 - 32 and Col. 8, lines 7 - 11).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Casler according to the teachings of Elias for the purpose of, advantageously providing a device that measures and monitors and senses torque or load conditions which would cause subsequent damage to a drive motor and other power transmission elements, directly by measuring the tangential force developed at the gears and transmitted to the rotational shaft member and its housing yet maintaining the accurate alignment of all parts (See Elias, See Col. 2, lines 36 - 41).

Regarding claim 60, in Casler, the strain sensor 60 in the form of a strain gage and connected to an evaluation unit 70, 80 and in indicating device 90 from which data is transmitted and read (See Col. 6, lines 39 – 54).

4. Claims 52, 57 and 65 – 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Casler and Elias, as applied to claims 50, 51, 53 – 55 and 60 above, and further in view of Matsushima et al (6,066,907).

Regarding claim 52, Casler and Elias disclose all of the limitations of these claims except that the centering flange has at least one radially circumferential groove including a damping element. However, Matsushima et al disclose a brush holding device comprising an electric motor 2 (See Col. 4, line 32), an input drive shaft 9a, an output drive shaft 3, and a housing 4 on which a centering flange 8 is provided, wherein the centering flange has at least one radially circumferential groove 23 in which at least one damping element 24 is inserted (See Col. 2, lines 66 – 67, Col. 3, lines 1 – 7 and 64 – 67 and Col. 4, lines 1 - 19).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Casler and Elias according to the teachings of Matsushima et al for the purpose of, advantageously suppressing noise and cracks caused by engine vibration and suppressing local wear and cracks of brushes (See Matsushima et al, Col. 1, lines 44 - 51).

Regarding claim 57, in Casler, the attachment flange 52a is at least partially coaxially separated by a member B2 from a casing surface of the housing 32, 34, 36 (See Col. 5, lines 28 – 34).

Regarding claims 65 and 66, in Casler, the damping element 24 is in the form of an elastically deformable rubber element and O-ring (See Col. 3, lines 64 – 67 and Col. 4, lines 1 – 6).

Regarding claim 67, in Casler, a plurality of circumferential grooves 23 are provided that are spaced apart from one another and are parallel to one another, and are provided in the flange 8 for insertion of a plurality of damping elements 24 (See Fig. 15).

Regarding claim 68, in Casler, the at least one damping element 24 overhangs the outside of a casing surface 5 of the flange 8 on the outside (See Col. 4, lines 8 – 30, See Fig. 1).

5. Claims 56, 59 and 61 – 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Casler (5,015,926) and Elias, as applied to claims 50, 51, 53 – 55 and 60 above, and further in view of Sakakibara et al (4,724,711).

Regarding claims 56 and 59, Casler and Elias disclose all of the limitations of these claims except that the strain sensor is arranged underneath the flange on the cylindrical housing, the flange having at least one constriction in the area of the incision, wherein the constriction is an at least partially radially circumferential constriction and holds the least one strain sensor. However, Sakakibara et al disclose a torque detector comprising a strain gage(s) 41a – 41d (See Figs. 1 and 4) located underneath a flange 37b on a housing 11 and flanges 37b, 37c having a constriction (See Fig. 1) in an area of an incision that holds the strain sensor (See Col. 2, lines 54 – 57 and Col. 4, lines 22 – 24 and 33 – 45, See Fig. 7).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Casler and Elias according to the teachings of Sakakibara et al for the purpose of, advantageously providing a torque detector using strain gages on a cantilever which is easily exchangeable (See Sakakibara et al, Col. 1, lines 55 – 59).

Regarding claims 61 and 62, Casler and Elias disclose all of the limitations of these claims except that force and/or a torque is determined by the at least one strain sensor and if a predetermined limit value is exceeded, an alarm signal or a switch-off signal can be generated and

displayed on the indicating electronics device, the signals being recorded over time, in order to determine the operating state of the transmission, and being stored in the evaluation unit. However, in Sakakibara et al, strain gage units 140,143 detect the torque and when a signal indicative of a predetermined limit value is outside a predetermined range an alarm signal is displayed on an indicating device 158 (See Col. 11, lines 3 – 16 and Col. 12, lines 1 – 8).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Casler and Elias according to the teachings of Sakakibara et al for the purpose of, providing an torque detector the enables the abnormality of the torque detector to be well judged and the easily corrected in an abnormality protective action (See Sakakibara et al, Col. 17, lines 49 – 53).

Regarding claims 63 and 64, in Casler, the strain sensor 60 is in the form of a strain gage and is connected to an evaluation unit 70, 80 and an indicator 90 from which data is read and displayed (See Col. 6, lines 39 – 54).

6. Claim 58 is rejected under 35 U.S.C. 103(a) as being unpatentable over Casler, Elias and Matsushima et al, as applied to claims 50 – 55, 57, 60 and 65 - 68 above, and further in view of Sakakibara et al (4,724,711).

Regarding claim 58, Casler, Elias and Matsushima et al disclose all of the limitations of these claims except that the strain sensor is arranged underneath the flange on the cylindrical housing, the flange having at least one constriction in the area of the incision, wherein the constriction is an at least partially radially circumferential constriction and holds the least one strain sensor. However, Sakakibara et al disclose a torque detector comprising a strain gage(s) 41a – 41d (See Figs. 1 and 4) located underneath a flange 37b on a housing 11 and flanges 37b, 37c having a constriction (See

Fig. 1) in an area of an incision that holds the strain sensor (See Col. 2, lines 54 – 57 and Col. 4, lines 22 – 24 and 33 – 45, See Fig. 7).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Casler, Elisa and Matsushima et al according to the teachings of Sakakibara et al for the purpose of, advantageously providing a torque detector using strain gages on a cantilever which is easily exchangeable (See Sakakibara et al, Col. 1, lines 55 – 59).

Response to Arguments

7. Applicant's arguments with respect to these claims have been considered but are moot in view of the new grounds of rejection.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Dean et al (5,094,109) disclose a pressure transmitter with stress isolation depression.

Jarrell et al (6,853,951) disclose methods and systems for analyzing the degradation and failure of mechanical systems.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Octavia Davis whose telephone number is 571-272-2176. The examiner can normally be reached on Mon through Thurs from 9 to 5. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lisa Caputo, can be reached on 571-272-2388. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/O. D./

Examiner, Art Unit 2855

3/27/09

/Lisa M. Caputo/

Supervisory Patent Examiner, Art Unit 2855